AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) Laser device comprising:

- an optical pumping means (10),

- an amplifying medium (2) excited by a laser beam (11) with a fundamental wavelength emitted by the optical pumping means, ~~the~~ an output face (7) of ~~this~~ the amplifying medium being cut according to the Brewster angle for said fundamental wavelength, and

- a birefringent crystal (4) for frequency doubling[[;]], a crystalline axis "c" of said birefringent crystal forming an angle θ_c, the angle θ_c being not zero with respect to the orthogonal direction of the polarization of a fundamental wave of the laser beam, defined by the Brewster surface, and

~~characterized in that it also comprises~~ an isotropic medium (3) inserted between the output face (7) of the amplifying medium and ~~the~~ an input face (8) of the birefringent crystal, wherein,

the refractive index of the isotropic medium is within 10% of the refractive index of the birefringent crystal, and

the amplifying medium (2) and the birefringent crystal (4) ~~being~~ are firmly attached to each other so as to constitute a monolithic resonant cavity~~; and in that the crystalline axis "c" of the birefringent crystal forms an angle θ_c which is not zero with respect to the orthogonal direction of the polarization of the fundamental wave, defined by the Brewster surface~~.

2. (currently amended) Device according to claim 1, characterized in that the input face (8) of the birefringent crystal is cut according to a slight angle ε with respect to ~~the~~ a normal to ~~the~~ a direction of propagation (5) of the laser beam ~~(5)~~.

3. (currently amended) Device according to claim 1, characterized in that the output face (9) of the birefringent crystal is cut according to a slight angle ε with respect to ~~the~~ a normal to ~~the~~ a direction of propagation (5) of the laser beam ~~(5)~~.

4. (previously presented) Device according to claim 2, characterized in that the angle ε is less than or equal to one degree.

5. (currently amended) Device according to claim 1, characterized in that ~~the~~ a plane orthogonal to ~~the~~ a direction

of propagation of the fundamental wave contains the crystalline axis "c", ~~this~~ the plane forming ~~an~~ another angle with respect to ~~the~~ an axis "a" and an axis "b" ~~axes~~ of the birefringent crystal so as to obtain a phase matching at the operating temperature between the fundamental wave and ~~the~~ a harmonic wave.

6. (previously presented) Device according to claim 1, characterized in that the amplifying medium (2) is constituted by yttrium aluminium garnet (YAG) doped with neodymium (Nd).

7. (currently amended) Device according to claim 6, characterized in that the amplifying medium (2) is a cylindrical crystal of ~~Nd:~~ YAG doped with Nd ~~the~~ with an input face ~~of which constitutes~~ forming a plane mirror.

8. (previously presented) Device according to claim 1, characterized in that the pumping means (10) is a laser diode.

9. (previously presented) Device according to claim 1, characterized in that the birefringent crystal (4) is made from potassium niobate ($KNbO_3$).

10. (canceled)

11. (previously presented) Device according to claim 1, characterized in that the isotropic medium is made from potassium tantalate ($KTaO_3$).

12. (canceled)

13. (currently amended) ~~Method used in a laser device according to claim 1, characterized in that~~ A method for tuning a frequency of a monomode, intra-cavity doubled laser device, having an optical pumping means (10), an amplifying medium (2) excited by a laser beam (11) with a fundamental wavelength emitted by the optical pumping means, the output face (7) of said amplifying medium being cut according to the Brewster angle for said fundamental wavelength, a birefringent crystal (4) for frequency doubling, a crystalline axis "c" of said birefringent crystal forming a non-zero angle θ_c with respect to the orthogonal direction of the polarization of the fundamental wave defined by the Brewster surface, either or both of an input face and an output face of said birefringent crystal being cut according to a slight angle ε with respect to a normal to a direction of propagation (5) of the laser beam, and an isotropic medium (3) inserted between the output face (7) of the amplifying medium and the input face (8) of the birefringent crystal, a refractive index of said isotropic medium being within 10% of a refractive index of the birefringent crystal, and the amplifying

medium (2) and the birefringent crystal (4) being firmly attached to each other so as to constitute a monolithic resonant cavity, said method comprising the steps of:

~~the optical path length covered by the laser beam is varied~~ varying an optical path length covered by the laser beam by translating the laser beam emitted by the pumping means with respect to the input face of the ~~amplifier~~ amplifying medium, the laser beam being moved along a plane, ~~in which the~~ wherein a distance in the plane covered by the laser beam in the amplifying medium varies as a function of ~~the~~ a latitude of ~~the~~ a passage in the amplifying medium; and

varying a length of the birefringent crystal by translation of the pumping means.

14. (currently amended) Device according to claim 2, characterized in that the output face (9) of the birefringent crystal is cut according to a slight angle ε with respect to the normal to the direction of propagation (5) of the laser beam ~~(5)~~.

15. (previously presented) Device according to claim 3, characterized in that the angle ε is less than or equal to one degree.

16. (previously presented) Device according to claim 14, characterized in that the angle ε is less than or equal to one degree.

17. (currently amended) Laser device comprising:

an optical pumping means (10);

an amplifying medium (2) excited by a laser beam (11) with a fundamental wavelength emitted by the optical pumping means;

a frequency doubling birefringent crystal (4); and

an isotropic medium (3) inserted between a final output face (7) of the amplifying medium and an input face (8) of the birefringent crystal, wherein,

the final output face (7) of the amplifying medium toward the birefringent crystal is cut according to the Brewster angle for said fundamental wavelength,

the amplifying medium (2) and the birefringent crystal (4) are attached to each other so as to constitute a monolithic resonant cavity, ~~and~~

~~the~~ a crystalline axis "c" of the birefringent crystal forms a non-zero angle θ_c with respect to ~~the~~ an orthogonal direction of the polarization of ~~the~~ a fundamental wave of the laser beam, defined by the Brewster surface, and

a refractive index of the isotropic medium is within 10% of a refractive index of the birefringent crystal.

18. (previously presented) The laser device of claim 17, wherein,

the isotropic medium (3) is constituted by potassium tantalate $KTaO_3$.

19. (previously presented) The laser device of claim 17, wherein,

the final output face (7) of the amplifying medium (2) is cut at the Brewster angle calculated from ~~the~~ a first index n1 and from ~~the~~ a second index n2 of the isotropic crystal (3), and

the amplifying medium and the isotropic crystal (3) are joined to each other on a portion of the final output face (7).

20. (currently amended) The laser device of claim 19, wherein,

a final output face (8) of the isotropic ~~crystal~~ medium (3) is joined to the birefringent crystal (4),

the isotropic ~~crystal~~ medium (3) and the birefringent crystal (4) have colinear geometrical axes and approximately identical ~~refractive index and~~ diameter, and

an input face of the isotropic ~~crystal~~ medium (3) is cut at the final output face (7) so that the laser beam (5) exiting from the amplifying medium (2) and deflected by the final

output face (7) passes through the isotropic medium (3) and the birefringent ~~crystals~~ crystal ~~(3, 4)~~ (4) parallel to their geometrical axes.